CME Properties and Fuzzy Classification

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In this paper, the theory and method of fuzzy classification are applied to analyse CME properties, with the use of the data in preliminary report and Solar Geophysical Data during 1979–1981, the theoretical computation for CME category is performed. According to the original data of average properties for 9 structureal classes of CME, the standardized value is obtained by average value and standard deviation. The fuzzy similitude matrix and equivalent matrix are built by use of the correlation coefficient transformation and the method of similitude coefficient, then we can divide 9 different structures into 3 categories of CME importance of major(I), middle(II), and minor(III). Halo was the most energetic, and single spike, diffuse fan CMEs were the least energetic. The quantitative properties of three importance categories are also given.

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